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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/449,697 | 11/24/1999 | PRABHAKAR RAGHAVAN | AM9990203 | 6589 |

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EXAMINER

LUDWIG, MATTHEW J

ART UNIT

PAPER NUMBER

2178

3

DATE MAILED: 07/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/449,697

Applicant(s)

RAGHAVAN ET AL.

Examiner

Matthew J. Ludwig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-25 and 27-38 is/are rejected.
- 7) ☒ Claim(s) 13, 26 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This action is responsive to communications: application filed 11/24/99.
2. Claims 1-39 are pending in the case. Claims 1, 14, and 27 are independent claims.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Specifically, see page 8, lines 20-21. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7, 14-20, and 27-33 are rejected under 35 U.S.C. 103 as being unpatentable over Dean et al., US Patent Number 6,321,220 filed (12/7/98).

In reference to independent claim 1, Dean discloses:

Pages may be directly linked to other pages or indirectly linked via intermediate pages.

Pages that are directly linked are considered to be close pages and pages that are linked via numerous intermediate pages are considered to be distant pages. See column 2, lines 50-60. The

reference demonstrates first and second sets of pages when it states the use of directly and indirectly linked sets of pages.

The reference discloses links, which define the connectivity of the pages and may be expressed as a graph where the pages are represented as nodes and the links are represented as directed edges. See column 2, lines 57-59. Dean further teaches connectivity information, which is useful for increasing the size of the result set. See column 2, lines 65-67. This method demonstrates a similar technique for expanding pages of common interest into a subset.

The enlarged result set taught by Dean, which is called a neighborhood graph, is a subset of the web graph. A neighborhood graph expresses the connectivity of pages that are located a predetermined distance away from a particular page or a result set.

Dean does not explicitly disclose expanding each identified core into a full community; however, It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the hyperlink methods of Dean and utilized the hyperlink pointing methods as disclosed on column 2, lines 50-54, for providing the user an added benefit of efficient common interest group identifications and expanding the result set taught by Dean.

In reference to dependent claim 2, Dean discloses:

Providing a query to a search engine, wherein the query is associated with a predetermined topic; retrieving at least one page associated with the query. See column 3, lines 50-59. The query demonstrates the utilization of input within the web environment and the return of multiple pages or sites within a web environment which include hyper-linked pages.

By processing the results of the query, it may be determined which of the nodes in the expanded graph did not match the original query terms, and the non-matching nodes may be

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eliminated from the graph. This filtering method may be applied to all of the nodes in the graph. See column 5, lines 55-67. This method of eliminating pages demonstrates the removal of pages. The reference does not explicitly teach removing the hyper-links *between any two pages on a same site*; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the elimination method taught by Dean to eliminate hyper-links between any two pages on a same site, because it would have a more proficient technique for matching groups of pages of general interest.

In reference to dependent claim 3, Dean discloses:

Nodes that are not on topic are discarded. Otherwise, the nodes remain in the graph. See column 5, lines 43-4.

In reference to dependent claim 4, Dean discloses:

The results are ordered by taking by taking the top few rated pages from each component and using them to construct a final ordered list of ranked pages. By choosing nodes that have a lower absolute authority score but are the best ranked pages in a component, the problem of choosing all the highest ranked nodes from a single component simply because that component was the largest component on the graph is avoided. See column 18-26.

In reference to dependent claim 5 & 6, Dean discloses:

Each page may have hyperlinks pointing to other pages, and each page may be pointed to by the hyperlinks of other pages. See column 2, lines 50-53. The pages described by the reference are not explicitly fan pages and candidate pages; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the

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hyperlinks taught by Dean to discard unnecessary pages from consideration to generate sets of pages for a well-organized group of similar pages.

In reference to dependent claim 7, Dean discloses:

Pages that are close to each other tend to contain related topics. Each page may have hyperlinks pointing to other pages, and each page may be pointing to by the hyperlinks of other pages. See column 2, lines 50-67.

In reference to claims 14-20, the claims are the computer program product for carrying out the methods of claims 1-7 respectively and therefore are rejected under similar rationale.

In reference to claims 27-33, the claims recite the system for carrying out the methods of claims 1-7 respectfully and therefore are rejected under similar rationale.

7. Claims 8-12, 21-25, and 34-38 are rejected under 35 U.S.C. 103 as being unpatentable over Dean and further in view of 'Automatic resource compilation by analyzing hyperlink structure and associated text', Soumen Chakrabarti, IBM , World Wide Web Conference, 1998.

In reference to dependent claim 8, Chakrabarti discloses:

Dean does not teach finding a plurality of candidate fan pages and candidate center pages; however, Chakrabarti points to two types of useful pages. An authority page is one that contains a lot of information about the topic. A hub page is one that contains a large number of links to pages containing information about the topic. To convert this principle into a method for finding good hubs and authorities, we first describe a local iterative process that "bootstraps" the mutually reinforcing relationship described above to locate good hubs and authorities. See

Chakrabarti, page 3. The reference demonstrates the process of finding two separate sets of useful pages and provides a proficient method of sharpening accuracy when focusing on a topic.

It would have been obvious to one of ordinary skill in the art, having the teachings of Dean and Chakrabarti before him at the time the invention was made, to modify the hyperlink methods taught by Dean to include the authority and hub pages of Chakrabarti, because it would have provided an proficient means of identifying different sets of pages.

In reference to dependent claim 9 & 10, Chakrabarti discloses:

After k iterations the pages are output with the 15 highest values in h as the hubs, and the 15 highest values in a as the authorities, without further annotation or human filtering. The reference further teaches if text descriptive of a topic occurs in the text around an href into p from a good hub, it reinforces our belief that p is an authority on the topic. See Chakrabarti, page 3. Chakrabarti demonstrates the utilization of two sets of pages, both of which are used in determining and outputting pages focused on a specific topic. The reference does not explicitly teach discarding pages that do not have a specific amount of hyperlinks pointing thereto; however, the designation of weights and the vectors used to compute the ordered sets of pages would have provided a proficient tool for removal of pages that do not meet the necessary requirements of the filtering method.

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Dean and Chakrabarti before him at the time the invention was made, to modify the hyperlink methods of Dean to include the weight and vector methods of Chakrabarti, because it would have provided the user a more efficient relevance ranking method.

In reference to dependent claim 11, Chakrabarti discloses:

After k iterations pages are output with the 15 highest values in h as the hubs, and the 15 highest values in a as the authorities, without further annotation or human filtering. See Chakrabarti, page 3. The reference demonstrates a repeating step for two sets of pages. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the hyperlink methods of Dean with the repetitive steps taught by Chakrabarti, because it would have provided a proficient method of relevance ranking for sets of pages.

In reference to dependent claim 12, Chakrabarti discloses:

After k iterations pages are output with the 15 highest values in h as the hubs, and the 15 highest values in a as the authorities, without further annotation or human filtering. See Chakrabarti, page 3. The reference demonstrates a repeating step for two sets of pages. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the hyperlink methods of Dean with the repetitive steps taught by Chakrabarti, because it would have provided a proficient method of relevance ranking for sets of pages.

In reference to claims 21-25, the claims recite the computer program product for carrying out the methods of claims 8-12 respectively and therefore rejected under similar rationale.

In reference to claims 34-38, the claims recite the system for carrying out the methods of claims 8-12 respectfully and therefore rejected under similar rationale.

Allowable Subject Matter

8. Claims 13, 26, and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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|-----------|-------------------------|-----------------|
| Baclawski | US Patent No. 6,505,191 | filed (7/23/99) |
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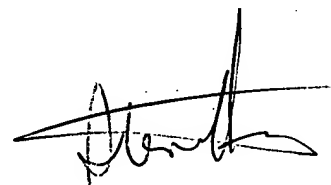
| | | |
|------|-------------------------|-----------------|
| Dean | US Patent No. 6,138,113 | filed (8/10/98) |
|------|-------------------------|-----------------|

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Ludwig whose telephone number is 703-305-8043. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 703-308-5186. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

ML
June 30, 2003



STEPHEN S. HONG
PRIMARY EXAMINER